UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,620	11/09/2001	Mark A.W. Stewart	FJFNX-180XX	1439

207   7590   08/23/2005

WEINGARTEN, SCHURGIN, GAGNEBIN & LEBOVICI LLP
TEN POST OFFICE SQUARE
BOSTON, MA 02109

EXAMINER
NGO, NGUYEN HOANG

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	10/014,620	STEWART, MARK A.W.
	Examiner	**Art Unit**	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 November 2001</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-9</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-9</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 2, 4, 5, 6, 7 and 8 are rejected under 35 U.S.C. 102(e) as being

anticipated by Fedyk et al. (US 6560654), hereinafter referred to as Fedyk.

Regarding claim 1, Fedyk discloses a method of forwarding a first message from a

source to a destination via a link state routing network (method of propagating link state

information in a routing area). Fedyk further discloses;

an initialization module in the source node which generates a setup message

having required link parameters such as the minimum amount of bandwidth permitted

within a link (col4 lines 61-64) and that other data in the setup message includes the

addresses of the source and destination nodes (generating a node state advertisement

at a first router, the node state advertisement identifying the first router and a link

(analogous to destination node) about which the first router desires to receive link state

information, col5 lines 6-10).

that the setup message preferably is transmitted to each node that permits each

intervening node to analyze the data within the setup message (col5 lines 14-15) and

that the link state routing network utilizes broadcast advertisements (setup message) to notify network devices (flooding the node state advertisement throughout the routing area so as to ensure that substantially all of the plurality of routers receive the node state advertisement, col2 lines42-44).

that each intervening node analyzes the data of the setup message and determines if its link satisfies the parameters in the setup message, and then forwards the setup message to the next node in the selected path if the parameters are satisfied (at each of the routers receiving the node state advertisement, determining whether the receiving router lies along a path meeting a predetermined criteria, col5 lines 15-19).

and that an intervening node that determines that its link does not satisfy the parameters in the setup message responsively generates a point-to-point feedback message to the source node, the feedback message includes data identifying a node, its link, and data indicating the unsatisfactory condition not met by such intervening node's link (at each of at least one second router determined to lie along such a path (intervening node), maintaining an association indicating that link state advertisements concerning the link (destination node) are to be forwarded along the path toward the first router (source), and upon a change of the state of link (unsatisfactory condition), forwarding a corresponding link state advertisement (feedback message) to an adjacent router along the path toward the first router, col5 lines 19-29).

Regarding claim 2, Fedyk discloses that the selected path preferably is the shortest

path of a plurality of available paths between the source and destination nodes (path be

the shortest path between the link and the first router, col4 lines 55-56).

Regarding claim 4, Fedyk discloses that the setup message having required link

parameters including a minimum amount of bandwidth permitted within a link (col4

line61-64). That if this condition is not met, a feedback message is to be sent (change

of the state of the link (link parameter) comprises a change in unreserved bandwidth of

the link (minimum amount of bandwidth is required)).

Regarding claim 5, Fedyk discloses that various other embodiments may be

implemented to establish a path across a link state routing network based upon other

qualities of the link such as specific latency requirements (change of state of the link

comprises a change in latency of the link, col7 lines 25-26).

Regarding claim 6, Fedyk discloses that if the feedback message is a negative

feedback message, therefore indicating a link failure or a resource limitation (bandwidth

or latency) somewhere along the selected path (change of the state of the link

comprises failure of the link, col6 lines 4-8).

Regarding claim 7, Fedyk discloses a method of forwarding a first message from a

source to a destination via a link state routing network to initialize a first path and a

second path (method of performing protection switching in a network, abstract). Fedyk

further discloses;

an initialization module in the source node (ingress node) which generates a

setup message having required link parameters such as the minimum amount of

bandwidth permitted within a link (col4 lines 61-64) and that other data in the setup

message includes the addresses of the source and destination nodes (col5 lines 6-10)

and that the setup message preferably is transmitted to each node that permits each

intervening node to analyze the data within the setup message (col5 lines 14-15) and

that the link state routing network utilizes broadcast advertisements (setup message) to

notify network devices (broadcasting a node state advertisement (setup message) from

an ingress node, the node state advertisement identifying the ingress node (source) and

a link included in the primary communication path (destination node containing specific

link), col2 lines42-44). Fedyk further discloses of a path generation module for

establishing a data transmission path between the source node and the destination

node and that such selected path is the shortest path (primary communication path and

the ingress node transmitting ingress data traffic on the primary communication path in

the absence of a failure, col4 lines 48-56).

and as stated above, that the link state routing network utilizes broadcast

advertisements (setup message) to notify network devices (flooding the node state

advertisement throughout the routing area so as to ensure that substantially all of the

plurality of routers receive the node state advertisement, col2 lines42-44).

that each intervening node analyzes the data of the setup message and

determines if its link satisfies the parameters in the setup message, and then forwards

the setup message to the next node in the selected path if the parameters are satisfied

(at each of the routers receiving the node state advertisement, determining whether the

receiving router lies along a path meeting a predetermined criteria, col5 lines 15-19).

and that an intervening node that determines that its link does not satisfy the

parameters in the setup message responsively generates a point-to-point feedback

message to the source node, the feedback message includes data identifying a node,

its link, and data indicating the unsatisfactory condition not met by such intervening

node's link (at each of the routers determined to lie along such a path (intervening

node), maintaining an association indicating that link state advertisements concerning

the link (destination node) are to be forwarded along the path toward the first router

(source), and upon a change of the state of link (unsatisfactory condition), forwarding a

corresponding link state advertisement (feedback message) to an adjacent router along

the path toward the first router and at a designated router (each intervening node), upon

a failure of the link, originating a link-state advertisement (feedback message) indicating

that the link has failed, and forwarding the link-state advertisement to an adjacent one of

the routers along the desired signaling path toward the ingress node, col5 lines 19-29).

that if the feedback message is a negative feedback message received at the

source, therefore indicating a link failure, another path is selected (backup

communication path) for attempting to transmit the desired data and that the use of

such path is dependent upon information in the feedback message (at the ingress node,

upon receipt of the link-state advertisement (feedback message) indicating the link has

failed, switching the ingress data traffic from the primary communication path to a

backup communication path, col6 lines 4-16).

Regarding claim 8, Fedyk discloses that the selected path preferably is the shortest

path of a plurality of available paths between the source and destination nodes (path be

the shortest path between the link and the ingress node, col4 lines 55-56).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

5.   Claim 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fedyk et al. (US 6560654) in view of Szviatovszki et al. (US 2002/0141345), hereinafter

referred to as Fedyk and Szviatovszki.

Regarding claim 3, Fedyk fails to disclose the specific limitation of claim 3.

Szviatovszki however discloses that a particular route specification, which ·

specifies source, destination, bandwidth, priority, and constraints, is converted into a

path, which specifies the actual adjacent router "hops" on which a path's setup message

can be routed hob-by-hop and that the goal of path selection is to convert a route

specification into a path (page 1 [0006]). Szviatovski further states each router makes

only an individual decision as to which is the next host to which a packet must be

forwarded in order to reach its final destination (storing a next hope node identifier with

a link state entry for the link (feedback message indicating link state, as disclosed by

Fedyk), the next hop node identifier identifying the adjacent one of the routers, page1

[0009]). Szviatovski thus provides the motivation for a need of a next node identifier for

the setup message in order to effectively forward the message to a specific destination

at the intervening nodes.

It should thus be obvious to a person skilled in the art to incorporate the method

of having a route specification, more precisely a next hope node identifier for creating a

path as disclosed by Szviatovski with the method of forwarding a first message from a

source to a destination via a link state routing network as disclosed by Fedyk in order to

effectively forward the message (feedback message containing the link state) to the

source.

Regarding claim 9, Fedyk fails to disclose the specific limitation of claim 9.

Szviatovszki however discloses that a particular route specification, which

specifies source, destination, bandwidth, priority, and constraints, is converted into a

path, which specifies the actual adjacent router "hops" on which a path's setup message

can be routed hob-by-hop and that the goal of path selection is to convert a route

specification into a path (page 1 [0006]). Szviatovski further states each router makes

only an individual decision as to which is the next host to which a packet must be

forwarded in order to reach its final destination (storing a next hope node identifier with

a link state entry for the link (feedback message indicating link state, as disclosed by

Fedyk), the next hop node identifier identifying the adjacent one of the routers, page1

[0009]). Szviatovski thus provides the motivation for a need of a next node identifier for

the setup message in order to effectively forward the message to a specific destination

at the intervening nodes.

It should thus be obvious to a person skilled in the art to incorporate the method

of having a route specification, more precisely a next hope node identifier for creating a

path as disclosed by Szviatovski with the method of forwarding a first message from a

source to a destination via a link state routing network as disclosed by Fedyk in order to

effectively forward the message (feedback message containing the link state) to the

source.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a) Kalmanek, Jr. et al. (US 6711152), Routing Over Large Clouds.

b) Saleh et al. (US 6856627), Method For Routing Information Over A Network.

c) Huai et al. (US 6614785), Automatic Propagation Of Circuit Information In A

Communication Network.

d) Adolfsson (US 6823395), Arrangement And Method Relating To Routing In A

Network.

e) Navas (US 2003/0026268), Characteristic Routing.

f) McAllister et al. (US 6876625), Method And Apparatus For Topology Database

Re-Synchronization In Communication Networks Having Topology State Routing

Protocols.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-

8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

N.N.
***

Nguyen Ngo
United States Patent & Trademark Office
Patent Examiner AU 2663
(571) 272-8398

RICKY NGO
PRIMARY EXAMINER

8/18/05